



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,950	07/05/2006	Hiroyuki Nagasaka	128620	2778

25944 7590 06/10/2010  
OLIFF & BERRIDGE, PLC  
P.O. BOX 320850  
ALEXANDRIA, VA 22320-4850

EXAMINER
----------

KIM, PETER B

ART UNIT	PAPER NUMBER
----------	--------------

2882

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

06/10/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
jarmstrong@oliff.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,950	<b>Applicant(s)</b> NAGASAKA, HIROYUKI	
	<b>Examiner</b> Peter B. Kim	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-18, 39-41, 49, 50 and 54-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14, 16, 39, 49, 50, 54 and 55 is/are rejected.
- 7) ☒ Claim(s) 15, 17, 18, 40, 41 and 56-65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's arguments filed on Feb. 19, 2010 have been fully considered.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 16, 39, 49, 50, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamoto et al. (Wakamoto) (6,118,515) in view of Vogel et al. (Vogel) (2004/0257544).

Regarding claims 14, and 39, Makinouchi discloses an exposure apparatus and a method and a device manufacturing method using the apparatus which exposes a substrate (15) by radiating an exposure light beam (IL) onto the substrate, the apparatus comprising a projection optical system (PL), a substrate stage (17, 19, 20) which holds the substrate wherein a magnitude of a velocity of movement of the substrate stage differs depending on a distance between a first position and a second position when the substrate stage is moved substantially linearly from the first position to the second position (Fig. 5, col. 14, line 45 - col. 15, line 23, Fig. 7(b), 7(c), col. 16, lines 39-55). In Wakamoto, the distance the substrate stage moved in the scanning direction (x-direction) and stepping direction (y-direction) are different and the magnitude of velocity is different (see Fig 7(b) and 7(c)).

Regarding claim 16, Wakamoto discloses wherein a magnitude of a velocity movement of the substrate stage differs depending on a direction of movement of the substrate stage from a first position to a second position when the substrate stage is moved substantially linearly from the first position to the second position. (Fig. 5, col. 14, line 45 - col. 15, line 23, Fig. 7(b), 7(c), col. 16, lines 39-55). In Wakamoto, the distance the substrate stage moved in the scanning direction (x-direction) and stepping direction (y-direction) are different and the magnitude of velocity is different (see Fig 7(b) and 7(c)).

Regarding claims 49, 50, and 54, the method for producing a device comprising exposure a substrate and processing the substrate to form the device is inherent to the exposure apparatus and exposure method of Wakamoto.

However, Wakamoto does not disclose immersion liquid lithography wherein an exposure light is radiated onto a substrate through a liquid and a liquid supply and a liquid recovery. Vogel discloses an exposure apparatus and a method for producing a device using the apparatus which exposes a substrate (101) by radiating an exposure light beam onto the substrate through a liquid (para 0029), the apparatus comprising a projection optical system (102), a liquid supply mechanism (105A), a liquid recovery mechanism (105B); and a substrate stage (inherent) which hold the substrate (101). Regarding claim 55, Vogel discloses the liquid immersion area formed on the substrate stage including a liquid immersion area on the substrate held on the substrate stage (Fig. 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the immersion liquid to the invention of Wakamoto in order to improve the resolution as taught by Vogel in para 0004, 0005.

***Allowable Subject Matter***

Claims 15, 17, 18, 40, 41, and 56-65 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 15 and 40, none of the prior art of record teaches or discloses an exposure apparatus and a method comprising the velocity of movement of the substrate stage is decreased when the distance between the first position and the second position is not less than a predetermined amount as compared with when the distance between the first position and the second position is shorter than the predetermined amount in combination with the limitations of the independent claims from which claims 15 and 40 depend.

Regarding claim 17, none of the prior art of record teaches or discloses an exposure apparatus comprising the velocity of movement of the substrate stage is decreased when the substrate stage is moved in a predetermined direction in which a liquid recovery force brought about by the liquid recovery mechanism is smaller than when the substrate stage is moved in a direction different from the predetermined direction in combination with the limitations of claim 16.

Regarding claim 41, none of the prior art of record teaches or discloses an exposure method comprising recovering the liquid disposed on the substrate, wherein the velocity of movement of the substrate is decreased when the substrate is moved in a predetermined direction in which a liquid recovery force is weak as compared with when the substrate is moved in a direction different from the predetermined direction in combination with the limitations of claim 39.

Art Unit: 2882

Regarding claim 56, none of the prior art of record teaches or discloses an exposure apparatus wherein when the distance between the first position and the second position is not less than a predetermined distance, the magnitude of the velocity of movement of the substrate stage is decreased such that the liquid is prevented from leaking from the liquid immersion area in combination with the limitations of claim 14.

Regarding claim 57, none of the prior art of record teaches or discloses an exposure apparatus wherein when the substrate stage is moved in a predetermined direction, the magnitude of the velocity of movement of the substrate stage is decreased such that the liquid is prevented from leaking from the liquid immersion area in combination with the limitation of claim 16.

Regarding claim 58, none of the prior art of record teaches or discloses an exposure method wherein the magnitude of the velocity of movement of the substrate is decreased such that the liquid is prevented from leaking from a liquid immersion area formed on the substrate in combination with the limitation of claim 39.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2882

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2882

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter B. Kim/  
Primary Examiner, Art Unit 2882

June 5, 2010